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ABSTRACT

This paper uses data obtained by a large statewide survey of Massachusetts residents to measure the relative importance of certain motivations in influencing the overall statewide vote on Proposition 2 1/2. Proposition 2 1/2 severely restricts the ability of Massachusetts cities and towns to raise tax revenue for local services. Interviews were conducted by a professional survey firm during the 2 weeks following the vote and were based on a survey instrument written specifically for this purpose. Section I provides an overview of the voting model. Section II reports and interprets the results, and section III summarizes the conclusions. The most important factors leading to increases in the favorable vote were the views toward inefficiency and waste in government. The survey results clearly indicated that the vote for Proposition 2 1/2 was much more of an attempt to obtain lower taxes and efficient government than to reduce the level of public services. Appended are four references and five tables providing data on the impacts of the statewide vote for Proposition 2 1/2 on several different factors: (1) preferred and expected changes in service levels; (2) inefficiency and waste; (3) spending and taxes; (4) tax reform; and (5) relative fiscal status. (SI)

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WHY VOTERS SUPPORT TAX LIMITATIONS: EVIDENCE FROM MASSACHUSETTS' PROPOSITION 2½

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WHY VOTERS SUPPORT TAX LIMITATIONS: EVIDENCE FROM MASSACHUSETTS' PROPOSITION 2½

On November 4, 1980 Massachusetts voters followed California's lead by passing a stringent tax limitation measure. Commonly known as Proposition 2½, the measure severely restricts the ability of Massachusetts cities and towns to raise tax revenue for local public services. Cities and towns are required to reduce property tax levies by at least 15 percent per year until they reach the maxumum allowable rate of 2½ percent; communities with rates below that level are allowed to raise property taxes, but by no more than 2½ percent per year.

While high property taxes in Massachusetts set the stage for the passage of Proposition 2½, a variety of goals -- including but not limited to property tax reduction -- may have motivated individual voting behavior.[1] Support for property tax reduction, for example, may have been motivated by a desire to reduce service levels, to increase government efficiency, or to achieve tax reform in the sense of shifting away from local property taxes in favor of state sales or income taxes. Similarly, opposition to the tax limitation measure may have indicated satisfaction with existing service levels, the way government operates, or with the division of financing responsibilities among levels of government. In addition, some voters may have supported Proposition 2½ to improve their fiscal status relative to other groups and others may have opposed it to preserve their public sector jobs.

This paper uses data from a large statewide survey of Massachusetts residents to measure the relative importance of these motivations in influencing the overall statewide vote on Proposition 2½. The survey consisted of half-hour telephone interviews conducted by a professional survey firm during the two weeks following the vote and was based on a survey instrument that was written by the authors specifically for this purpose. The full sample includes 1,561 male and female household heads randomly selected from 58 Massachusetts cities and towns.[2] The

sampling design assures that the 58 communities are representative of cities and towns throughout the state in terms of per capita property wealth, per capita expenditures, population, and percent of owner-occupied housing.[3]

Although based on a single state, the results reported here should be useful to policy makers in other states and researchers in other areas trying to understand the message of the nationwide "tax revolt." The Massachusetts experience is particularly enlightening for a number of reasons. First, a vigorous campaign together with thorough media coverage assured that residents were well informed both of the proposition's provisions and of the issues. This means that the case of Massachusetts is an appropriate setting for examining the link between voting behavior and complex public sector issues. Second, the absence of a state surplus meant that passage of Proposition 2½ would force state and local governments to make budget reductions immediately. This contrasts with the well-studied California situation where a large state surplus enabled people to believe that the tax limitation measure would not result in fewer public services. Third, the choice before the voters was clear-cut. Although the Massachusetts Teachers' Association had placed an alternative tax limitation measure on the ballot, it chose to campaign against Proposition 2½ rather than for its own proposal; with no organized support for the Association's proposal, its existence apparently played little role in the vote on Proposition 2½.[4] This situation is quite unlike the 1978 Michigan experience where the presence of alternatives and confusion about what would happen if two or more of the measures received majority support may have influenced voting behavior in a non-generalizable way.[5]

It should be noted that Massachusetts' Proposition 2½ is an initiative law rather than a constitutional amendment; once passed by the voters, it became a regular law subject to change by the legislature. Although this characteristic of Proposition 2½ should be borne in mind when interpreting the results of this study, the distinction between an initiative law and a constitutional amendment need not be

overemphasized; state legislators are generally reluctant to undo what the majority of the voters support, particularly when the majority is large.[6]

The following section provides an overview of the voting model, Section II reports and interprets the results, and Section III summarizes the conclusions.

I. MODEL OVERVIEW

Proposition 2½'s main thrust is to roll back or limit the growth of property taxes in Massachusetts' 351 cities and towns.[7] Combined with the proposition's reduction in the motor vehicle excise tax, these provisions reduced local tax revenues by almost $500 million between fiscal years 1981 and 1982, or about 14 percent of 1981 tax revenues.[8] Proposition 2½ also removes fiscal autonomy of school committees, ends binding arbitration for police and fire personnel, prohibits the state from mandating programs without providing funds, and allows renters to deduct one-half of their rent payments from their state taxable income.[9]

Because it neither made explicit provision for new state aid to replace lost property taxes nor restricted the state government from raising state taxes, Proposition 2½'s impact on spending and taxes by level of government was uncertain at the time of the election. The impact on local spending of a fall in property taxes depended on the extent to which the state responded with new state aid. The impact on spending for state purposes depended on whether the new aid would be financed by higher state taxes or by lower state spending. In addition to uncertainty about spending levels, there was tremendous uncertainty about how spending changes would be allocated across functional categories and about the implications of spending changes for service levels.

The voting model for Proposition 2½ fully incorporates this wide range of potential effects and the uncertainty associated with them.

As Table I indicates, the model addresses six issues that might motivate support for or opposition to the tax limitation measure: service levels, inefficiency and waste, spending and taxes, tax reform, relative fiscal status, and public sector job status. For each of the first four, the model includes variables capturing voters' preferences, perceptions, or attitudes (column 2) and their expectations about what Proposition 2½ would accomplish (column 3). The former represent voters' desired changes in service or spending levels, government operations, and financing arrangements, regardless of Proposition 2½. The latter reflect voters' expectations about Proposition 2½'s impacts on the behavior of state and local governments and on the services consumed and the taxes paid by their households.

Relative fiscal status and public employee job status represent two additional aspects of self-interest that might motivate support or opposition to Proposition 2½. In addition to caring about specific service or tax levels, voters may care about the relative size of the net benefits they receive from the public sector. The model controls for and tests this motivation with a set of variables representing respondents' perceptions of how they fare relative to other groups of taxpayers. Unfortunately, there is no comparable measure of expectations about how Proposition 2½ would alter the respondent's relative fiscal status. Inclusion of public sector job status identifies the self-interest of voters who oppose the proposition to preserve their jobs, income, or quality of work environment.[10]

The full model explaining the probability that a voter voted "yes" on Proposition 2½ includes 45 variables and is based on the responses of the 1,114 sample voters for whom complete information is available.[11,12] Both forms of the model -- a linear probability model estimated by ordinary least squares and a logit model estimated using maximum likelihood techniques -- yield similar results. The discussion that follows focuses on the results of the linear form because its coefficients are simpler to interpret and it allows a simpler approximation of the relative contribution of each of the six issues listed in Table I to the statewide vote on Proposition 2½.[13] Comparable results for the logit model are reported in the appendix.

Table I

OVERVIEW OF VOTING MODEL

Issues Motivating Voting Behavior (1)	Variables: Preferences, Perceptions and Attitudes (2)	Variables: Expectations about Effects of Proposition 2-1/2 (3)
1. Service levels	Preferences for clusters of services	Expected effects on clusters of services; expected effects on services used by respondent's household,
2. Inefficiency and waste (cost of public services)	Perceptions of inefficiency or waste - state government - local government - local public schools	Expectations of more responsible government, more efficiency in local government, more voter control over schools.
3. Spending and taxes	Desired spending and taxing by - state government - local government - local public schools	Expected effects on state and local taxes; expected effects on taxes paid by respondent's household.
4. Tax reform (tax shift)	Desired tax shifts. Attitudes toward taxes.	Expectations about state aid and about tax reform.
5. Relative fiscal status	Perceptions of how other groups fare relative to household.	- -
6. Public sector job status	- -	Public sector employee as proxy for fear of job loss or decline in quality of work environment.

Overall, the linear probability model does an excellent job of explaining the vote on Proposition 2½. The R^2 of 0.54 is high for linear probability models given the binary nature of the dependent variable. More importantly, using a cut-off probability of 0.5 to separate "yes" voters from "no" voters, the model correctly predicts 85 percent of the sample voters. This represents a substantial gain over the 51 percent that would be correctly predicted by chance or the 58 percent that would be correctly predicted by projecting a "yes" vote for everyone in the sample.[14]

II. EMPIRICAL RESULTS

The six issues identified in Table I as likely to influence voting behavior on Proposition 2½ provide the framework for presentation and interpretation of the model results. For each issue, we first report the coefficients of the relevant variables. These coefficients show how preferences and expectations about the particular issue influenced the probability that an individual would vote for or against Proposition 2½, controlling for all other variables. We then present estimates of the impact of each specific view on the statewide vote for the proposition. Derived by weighting the marginal impacts from the estimated equation by the sample distribution of each variable, these "weighted impacts" show the difference between the actual percentage of respondents who voted in favor of Proposition 2½ and what the statewide vote of household heads would have been had voters neither wanted nor expected any change in each specific variable.[15]

Service Levels

Like other surveys of voters' preferences for public services at the time of tax limitation votes, this study finds that a majority of Massachusetts voters wanted to maintain or increase the levels of most state and locally provided public services.[16] This does not rule out the possibility, however, that a substantial minority voted for tax limitation with the explicit goal of either reducing overall services or of reducing the levels of particular services.

To examine this possibility, preference and expectations variables were defined for each of the following five clusters of public services:[17]

- Education and recreation: includes public elementary and secondary education, after school programs such as music and athletics, adult education, and local parks and recreation.
- Public safety: includes police and fire-fighting services.
- Sanitation and street maintenance: includes garbage collection and street and sidewalk repairs.
- Human services: includes special education for children with learning problems, mental health programs, and services for the elderly.
- Welfare: welfare and other public assistance.[18]

Beyond reducing the number of separate services in the model to a manageable level, clustering also averages out the random errors associated with responses to a single item. The clusters nonetheless provide sufficient detail to isolate how views toward different types of services influenced the vote on Proposition 2½.

For each cluster of services, preference variables were constructed by taking the mean response across items to a question about whether respondents would like a particular service cut back a lot, cut back a little, kept the same, increased a little or increased a lot.[19] The service level expectations variables are similarly constructed with the scale representing respondents' views on whether Proposition 2½ will lead to a lot less or a little less, the same amount, a little more or a lot more of each public service. The five-point scales for preferences and expectations are treated as if they were interval scales. With respect to expectations, however, it is reasonable to suppose that voters might have viewed the difference between services

that would be cut "a lot" and those that would be cut "a little" (i.e., the difference between a 1 and a 2 on the scale) as larger than the difference between services that would be cut "a little" and those that would be kept the same (i.e., the difference between a 2 and a 3). This consideration led to a logarithmic specification for all the service expectations variables except for welfare for which the linear form was preferred.[20]

As Table II indicates, four of the five preference variables have negative coefficients. This finding supports the view that, for most types of services, respondents who prefer service cutbacks are more likely to support Proposition 2½ than those who prefer the same or higher service levels. The clusters of locally provided services, i.e., education and recreation and public safety, exhibit the greatest effects. The desire to reduce education and recreation services a little (a lot), for example, increases the probability that a voter will support Proposition 2½ by four (eight) percentage points compared to the desire to maintain services at their current level.

Although state and federal taxes fully finance welfare in Massachusetts, many people expected Proposition 2½ to lead to welfare reductions. For some voters, this expectation may have reflected the incorrect belief that welfare is financed in part by local property taxes; for others it may have reflected the belief that the money for new state aid would come from existing public assistance programs. These views help to explain why the desire for less welfare assistance increases the probability of support for Proposition 2½ even though its provisions apply only to local taxes.

Surprisingly, preferences for human services have a positive, though statistically insignificant, coefficient, suggesting that voters who wanted to increase human services may have been more likely to support Proposition 2½ that those who did not. This finding is hard to explain. Both state and local governments finance and deliver human services in Massachusetts. It is possible, however, that voters wanting to increase human services supported Proposition 2½ in the

Table II

SERVICE LEVELS

Estimated Coefficients and Impacts on Probability of a "Yes" Vote[a]

Variable	Form[b]	Coefficient (t-statistic)[c]	Effect on Probability of a "Yes" Vote of Expectation that Services Will be Cut Back:[d] a little	a lot
Preferences				
Education and Recreation	Linear (1-5)	-0.040 (2.01)		
Public Safety	Linear (1-5)	-0.027 (1.57)		
Sanitation and	Linear (1-5)	-0.004 (0.22)		
Human Services	Linear (1-5)	0.024 (1.39)		
Welfare	Linear (1-5)	-0.023 (2.10)		
Expectations				
Education and Recreation	Ln(1-5)	0.151 (3.02)	-0.061	-0.166
Public Safety	Ln(1-5)	0.124 (2.98)	-0.051	-0.136
Sanitation and Street Repair	Ln(1-5)	0.041 (1.01)	-0.017	-0.045
Human Services	Ln(1-5)	0.119 (2.64)	-0.048	-0.131
Welfare	Linear (1-5)	-0.043 (3.12)	0.043	0.086
Total Community Services	Ln(1-5)	0.124 (3.81)	-0.050	-0.136
Services Used by Household	Ln(1-5)	0.031 (0.82)	-0.013	-0.034

[a]Based on the full model of voting behavior, which includes 45 independent variables and was estimated by ordinary least squares. The dependent variable is "1" if the respondent voted "yes" on Proposition 2½ and "0" if he or she voted "no."

[b]The preference and expectations scales are decrease a lot (1); decrease a little (2); no change (3); increase a little (4); and increase a lot (5). "Ln" signifies that the variable is expressed as a natural logarithm.

(Continued)

Footnotes Continued from Table II

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[c] t-statistics are in absolute - value form.

[d] Compared to the expectation that services will not change.

hope that a tax structure less dependent on local property taxes would be better suited to providing these services.

Comparison of the upper and lower sections of Table II reveals that expectations about the impacts of Proposition 2½ on service levels influence voting behavior even more strongly than preferences. The positive signs of the first four service clusters -- education and recreation, public safety, sanitation and street repairs, and human services -- indicate that people expecting the measure to lead to cutbacks in these services were more likely to vote against the proposition than those who expected no change. The logarithmic specification for these four clusters captures the non-linear relationship between the expectations scale and the probability of voting yes. As the lower right section of Table II shows, the logarithmic form implies that expectations of large service cutbacks have more than twice the impact on the probability of voting "yes" on Proposition 2½ than expectations of small cutbacks.

In contrast to the first four service clusters, expectations about welfare services enter the model linearly and have a negative sign. The coefficient of -0.043 implies that voters who expected welfare to be cut back a little (a lot) are 4.3 (8.6) percentage points more likely to support Proposition 2½ than those who expected no change. We interpret this result to mean that voters, on average, viewed expected reductions in welfare as a desirable outcome of the tax limitation measure.[21]

To capture all possible service-related effects, the model also includes respondents' expectations about how Proposition 2½ would affect overall service levels in their particular community as well as specific services directly used by their households. The positive and statistically significant coefficient for expectations about overall community services signifies that this variable exerts an independent influence on voting behavior; the larger the cutbacks expected, the lower the probability of a favorable vote. The small and statistically insignificant coefficient of the other variable, however, implies that

voters' concerns about the impact of Proposition 2½ on the services directly used by their households are already captured by the service cluster variables.

The results reported so far relate to individual behavior; the estimated impacts of these service-related views on the statewide vote for Proposition 2½ are reported in Table III. Each "weighted impact" is the sum of the estimated effects on the probability of a "yes" vote weighted by the proportion of sample respondents in each response category. In each case, the implicit comparison is to a base case of "no change" in either a preference or an expectations variable (a value of 3 on the 5-point scale).[22]

The results are striking. On net, preferences and expectations about all the service clusters other than welfare decreased the favorable vote on Proposition 2½ compared to what the voting outcome would have been had voters neither wanted nor expected changes in service levels. In addition, expectations of changes in services influenced the vote more strongly than preferences. Typically, the net effects result from small positive contributions to the favorable vote from people who desire fewer services or who expect more (shown in the "for" column) and larger negative contributions from people desiring more services or who expect fewer (shown in the "against" column). Views toward local education and recreation have the biggest impact of any cluster of services. These views reduce the overall favorable state vote by close to 7 percentage points. Taken together, the net effect of all service variables other that welfare is to reduce the favorable vote on Proposition 2½ by 18.3 percentage points.[23]

These results for all services other than welfare reflect the fact that voters on average desired higher service levels but expected Proposition 2½ to reduce them. As Table IV demonstrates, the percent of voters wanting cutbacks in particular service areas is substantially less than the percent expecting cutbacks.

Table III

PUBLIC SERVICES

PREFERENCES AND EXPECTATIONS

Weighted Impacts on Total Vote[a]

Variable	Weighted Impacts on Total Vote		
	For	Against	Net
Education and Recreation			
Preferences for less	0.008		
-- for more		-0.015	
Expectations of less		-0.061	
-- of more	0.001		
			-0.067
Public Safety			
Preferences for less	0.003[b]		
-- for more		-0.009[b]	
Expectations of less		-0.029	
-- of more	0.001		
			-0.034
Sanitation and Street Repair			
Preferences for less	0.001[b]		
-- for more		-0.001[b]	
Expectations of less		-0.011[b]	
-- of more	0.000[b]		
			-0.011
Human Services			
Preferences for less		-0.002[b]	
-- for more	0.017[b]		
Expectations of less		-0.034	
-- of more	0.002		
			-0.017
Welfare			
Preferences for less	0.020		
-- for more		-0.004	
Expectations of less	0.037		
-- of more		-0.002	
			0.051
Total Community Services			
Expectations of less		-0.056	
-- of more	0.002		
			-0.054
Services Used by Household			
Expectations of less		-0.008[b]	
-- of more	0.000[b]		
			-0.008

[a]Each entry is the difference between the actual statewide vote of household heads for Proposition 2½ and the predicted vote had no household head wanted or expected the specified change in service levels.

[b]Based on a coefficient that is not statistically significant at the 5 percent one-tailed level.

Table IV

PUBLIC SERVICES

DISTRIBUTION OF PREFERENCES AND EXPECTATIONS[a]

Variable	Mean Response	Percent Wanting Decrease	Percent Expecting Decrease
Education and Recreation			
Preferences	3.17	31%	--
Expectations	2.12	--	87%
Police and Fire			
Preferences	3.19	13	--
Expectations	2.50	--	48
Street Repairs and Garbage Collection			
Preferences	3.17	17	--
Expectations	2.37	--	64
Human Services			
Preferences	3.61	12	--
Expectations	2.41	--	70
Welfare			
Preferences	2.32	57	--
Expectations	2.18	--	65
Overall Community Services			
Expectations	2.10	--	72
Services used by the respondent's household			
Expectations	2.33	--	49

[a]Based on 1114 respondents who voted on Proposition 2½. The preference and expectations scales are decrease a lot (1); decrease a little (2); no change (3); increase a little (4); and increase a lot(5).

Welfare stands out as the only service that more than half the voters wanted to see reduced. As noted above, it is also the only service for which the expectations variable has a negative sign in the voting model. These factors together imply that attitudes toward welfare contribute 5.4 percentage points to the favorable vote on Proposition 2½.

Inefficiency and Waste

Massachusetts voters believe that both their state and local governments deliver public services inefficiently. Over 80 percent of the voting model sample believe, for example, that spending by each level of government could be reduced by five percent or more without reducing the quality or quantity of services provided. As reported elsewhere, 73 percent of the total sample of voters and non-voters believe state spending could be cut 15 percent or more, and 60 percent believe that local spending could be similarly cut, without service reductions. In addition, 88 percent of these respondents think corruption is common in state government while 63 percent believe that corruption is common in their particular local government. In response to two other questions related to the cost of providing local public services, 47 percent agree with the statement that "city or town employees are overpaid" and 67 percent agree that "local public employees do not work as hard as employees of private companies."[24]

The results of the voting model suggest that, controlling for other preferences, expectations, and attitudes, such perceptions of inefficiency and waste in public service delivery influence the vote on Proposition 2½ somewhat, but that expectations about the measure's ability to alter the way government operates are a more powerful set of explanatory variables. Those believing that the tax limitation measure would make government more efficient and responsible are thus much more likely to support Proposition 2½ than those less optimistic in this regard.

Starting with perceptions and attitudes, the model includes five variables to capture voters' views about the extent of government waste and inefficiency. Four of these are dummy variables that take on the value 1 if the respondent thinks state, local, school, or welfare spending can be reduced by five percent or more without service cutbacks.[25] Because school spending is such a large proportion of local budgets and welfare spending of the state budget, each is included as a separate spending category. Controlling for perceptions about school and welfare inefficiency in this way implies that the local inefficiency variable can be interpreted as local non-school inefficiency and the state government inefficiency variable as non-welfare state government inefficiency. The fifth variable measuring perceptions of inefficiency and waste is the respondent's extent of agreement with statements that local government employees are overpaid and that they work less hard than private sector employees. The higher the average response in the range 1 to 4, the more strongly the respondent agrees that the wage costs of locally provided public services are excessively high. The data presented in Table V show that only two of these five variables are statistically significant. In particular, respondents who believe that school services are inefficiently provided or who believe that wage costs are too high are more likely than others to support Proposition 2½.[26]

In contrast, all three expectations variables are statistically significant and have large positive coefficients. Voters who expect Proposition 2½ to make local government more efficient are 12.9 percentage points more likely to vote for the measure than those who are less optimistic about efficiency gains. Similarly, the belief that the most important effect of Proposition 2½ will be to make government more responsible and efficient or less corrupt increases the probability of a "yes" vote by 9.6 percentage points. Moreover, the belief that Proposition 2½ will increase voter control over school spending raises the probability of a "yes" vote by 12.9 percentage points. The additive form of the model implies that, controlling for other variables, these three expectations alone raise the probability of supporting Proposition 2½ by 35 percentage points.

Table V

INEFFICIENCY AND WASTE

Estimated Coefficients and Weighted Impacts on Total Vote[a]

Variable	Form	Coefficient (t-statistic)	Weighted Impact on Total Vote For	Against	Net
Perceptions of Inefficiency in:					
local government	0-1	-0.002 (0.05)		-0.002[b]	
state government	0-1	0.039 (1.03)	0.034[b]		
local schools	0-1	0.050 (2.01)	0.031		
welfare spending	0-1	0.018 (0.58)	0.015[b]		
Attitude					
Local government employees are overpaid and do not work hard	Linear (1-4)[d]	0.057 (4.23)	0.026	-0.015	
Expectations					
More efficiency in local government	0-1	0.129 (4.89)	0.084		
More efficient, responsible, or less corrupt government (single most important impact)	0-1	0.096 (3.638)	0.021		
More local voter control over school spending		0.129 (5.122)	0.090		
					0.284

[a]Based on the full model of voting behavior which includes 45 independent variables and was estimated by ordinary least squares. The dependent variable is "1" if the respondent voted "yes" on Proposition 2½ and "0" if he or she voted "no." The weighted impacts are the difference between the actual statewide vote of household heads for Proposition 2½ and the predicted vote had no household head perceived inefficiency or expected Proposition 2½ to make government more efficient.

(Continued)

Footnotes Continued from Table V

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[b]Based on a coefficient that is not statistically significant at the 5 percent one-tailed level.

[c]t-statistics are in absolute-value form.

[d]The base for the calculation of weighted impacts is a value of 2.5.

The weighted effects of the inefficiency variables, also presented in Table V, indicate the contribution of each variable to the overall state vote. Each weighted impact starts from a base case in which the respondent perceives little or no inefficiency in government (a value of zero for each perception variable), neither agrees nor disagrees that local government employees are overpaid or do not work hard (a value of 2.5 for the attitude variable), and expects no change in the way government operates (a value of zero for each expectation variable).

Unmistakably, these perceptions, attitudes, and expectations about government inefficiency and waste make a substantial contribution to the statewide vote in favor of Proposition 2½. Most of the weighted effects are large and positive, the largest being the eight and nine percentage point impacts of the expectation that the measure would produce more efficiency in local government and allow more voter control over school spending. The net additive contribution to the statewide vote of all these beliefs and expectations is about 28 percentage points, a large contribution compared to the sample favorable vote of 58 percent.

Spending and Taxes

Sample voters are much more likely to prefer lower spending and taxes than to prefer fewer services. The fraction of voters desiring spending reductions in state government, for example, is 65 percent vs. 42 percent preferring service reductions. The comparable percentages for local government spending and service reductions are 59 and 22 percent; and for school spending and services, 47 and 18 percent. Beliefs that government spending can be cut without reducing the quality and quantity of services help reconcile these differences, but they do not explain them fully. The question here is the extent to which voters' preferences for lower spending and taxes influence the vote on Proposition 2½, controlling for preferences for service levels and perceptions of government inefficiency and waste.

The three spending reduction variables, shown in the first three rows of Table VI, all have positive coefficients and make small contributions to the overall statewide favorable vote on Proposition 2½; only the school spending coefficient, however, is statistically significant.[27] Although the desire to decrease school spending increases the favorable vote by 2.3 percentage points, fear of lower school spending -- measured by a dummy variable representing the expectation that Proposition 2½ would lead to a decrease in school funds -- reduces the favorable statewide vote by 4 percentage points. On net, concern about decreased school spending thus outweighs the desire for that spending outcome in terms of its influence on the Proposition 2½ vote.

Instead of asking respondents directly about what they expected to happen to state and local government spending, the questionnaire elicited respondents' expectations about how Proposition 2½ would affect the major local tax, (the property tax) and the two major state taxes (sales and income taxes). The results shown in Table VI indicate that the expectation of lower property taxes increases the probability of a "yes" vote by 13 percentage points, with a large weighted effect on the overall vote of 10.6 percentage points. The possibility that the state government might raise state taxes to offset the local revenue losses from the measure, however, was viewed as an undesirable outcome as shown by the fact that the expectation of higher state income or sales taxes enters the probability model with a negative sign and exerts a weighted impact of 6.3 percentage points against the proposition.

The final tax variable, respondents' expectations about the impact of Proposition 2½ on household taxes, enters the voting model strongly with the predicted negative sign. The preferred logarithmic specification implies that expectations that household taxes would decrease "a lot" (a value of 1 on the five-point scale) has more than twice the effect on the probability of a "yes" vote than expectations that household taxes would decrease "a little" (a value of 2), rela-

Table VI

SPENDING AND TAXES

Estimated Coefficients and Weighted Impact on Total Vote[a]

Variable	Form	Coefficient (t-statistic)[c]	Weighted Impact on Total Vote For	Against	Net
Want lower spending and taxes					
-- state government	0-1	0.028 (1.13)	0.018[b]		
-- local government	0-1	0.021 (0.83)	0.012[b]		
-- local schools	0-1	0.049 (1.96)	0.023		
Expect decrease in school funds	0-1	-0.060 (2.55)		-0.041	
Expect lower property taxes	0-1	0.131 (4.50)	0.106		
Expect higher state taxes	0-1	-0.079 (2.93)		-0.063	
Expect lower household taxes	Ln(1-5)[d]	-0.112 (4.14)	0.031	-0.007	
			0.190	-0.111	0.079

[a]Based on the full model of voting behavior which includes 45 independent variables and was estimated by ordinary least squares. The dependent variable is "1" if the respondent voted "yes" on Proposition 2½ and "0" if he or she voted "no." The weighted impacts are the difference between the actual statewide vote of household heads for Proposition 2½ and the predicted vote had no household head wanted or expected lower spending or taxes.

[b]Based on a coefficient that is not statistically significant at the 5 percent one-tailed level.

[c]t-statistics are in absolute-value form.

[d]"Ln" signifies that the variable is specified as a natural logarithm.

tive to the expectation of no change (a value of 3). The weighted impacts indicate that expectations of lower household taxes contribute 3.1 percentage points to the favorable vote, while the less common expectation of higher taxes contributes a slight 0.7 percentage points against the vote.

In sum, compared to a base case of no desired or expected changes in spending and taxes, the desire for or expectation of lower spending or taxes contributes 19 percentage points to the favorable statewide vote on Proposition 2½, while fears of higher state taxes or lower school spending reduce the favorable vote by 11 percentage points.

Tax Reform

The above discussion treats tax reform only in the sense of property tax or overall tax reduction. In this section, tax reform is defined as a shift away from reliance on the property tax to alternative taxes or fees, controlling for the level of government spending.

The four desired tax shift variables in the voting model are based on a series of questions of the form: "For each service I read, would you like to keep the financing the way it is now or see a greater share of the money come from local property taxes, from state income taxes, from sales taxes, or a greater share from fees paid by the users of the service?" The shift variables include:

SHIFT1 = 1 if respondent wants more state (sales or income tax) financing of elementary and secondary education, and 0 otherwise.

SHIFT2 = 1 if respondent wants more state (sales or income tax) financing of special education, and 0 otherwise.

SHIFT3 = Sum of responses indicating a desired shift to state income or sales taxes for police, parks, or after school programs, divided by the number of these services for which an answer was given. (Range is 0 to 1).

SHIFT4 = Sum of responses indicating a desired shift to user charges for local transportation, adult education, and after school programs, divided by the number of these services for which an answer was given. (Range is 0 to 1.)

Table VII shows that SHIFT1, which captures the desire for more state financing of education, enters the voting model with a positive and statistically significant coefficient of 0.047. Compared to the base case of no desire to place heavier reliance on state taxes, however, these preferences contribute only about 1.6 percentage points to the statewide favorable vote on Proposition 2½. The desire to rely more heavily on user charge financing plays a similar role in the overall vote, contributing about 1.5 percentage points. The coefficients for the other two SHIFT variables are small and insignificant. Although this minimal impact is not surprising for SHIFT3, the results for SHIFT2 refute the hypothesis that dissatisfaction with the financing of special education played an important role in the Proposition 2½ vote.

Two additional attitude variables help represent respondents' views on tax reform. The first, a dummy variable that takes on the value 1 if the respondent believes the state should provide more aid to cities and towns to keep property taxes down, enters the voting model with a small negative and statistically insignificant coefficient. The second is a cluster of responses to two questions measuring respondents' attitudes toward redistributive taxes and state aid. The higher the average response (on a four-point scale), the more the respondent supports graduated income taxes or equalizing aid programs. The cluster's negative coefficient implies that those who favor using the state-local public sector to achieve redistributive goals are more likely to vote against the proposition. Presumably, these voters believe Proposition 2½ will obstruct, rather than facilitate, the redistributive tax reform they desire. Compared to a base of no opinion on this issue (a value of 2.5 on the four-point scale), the weighted impact of the desire for more redistributive taxes and aid decreases the statewide favorable vote by 0.9 percentage points; this is exactly

Table VII

TAX REFORM

Estimated Coefficients and Weighted Impact on Total Vote[a]

Variable	Form	Coefficient (t-statistic)[c]	Weighted Impact on Total Vote For	Against	Net
Desired Shifts					
SHIFT1: Shift of education to state taxes	0-1	0.047 (1.93)	0.016		
SHIFT2: Shift of special education to state taxes	0-1	0.009 (0.39)	0.005[b]		
SHIFT3: Shift of other local services to state taxes	0-1[d]	-0.019 (0.46)		-0.004[b]	
SHIFT4: Shift of certain services to user charges	0-1[d]	0.053 (1.53)	0.015[b]		
Attitudes					
State should give more aid to reduce property taxes	0-1	-0.013 (0.51)		-0.010[b]	
Support for redistributive taxes and aid	Linear (1-4)	-0.025 (1.83)	0.009	-0.009	
Expectations					
Tax reform	0-1	0.057 (1.96)	0.046		
More state aid	0-1	0.024 (1.10)	0.010[b]		
			0.101	-0.023	0.078

[a] Based on the full model of voting behavior which includes 45 independent variables and was estimated by ordinary least squares. The dependent variable is "1" if the respondent voted "yes" on Proposition 2½ and "0" if he or she voted "no." The weighted impacts are the difference between the actual statewide vote of household heads for Proposition 2½ and the predicted vote had no household head wanted or expected tax reform or a shift in the financing of public services.

(Continued)

Footnotes Continued from Table VII

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[b]Based on a coefficient that is not statistically significant at the 5 percent one-tailed level.

[c]t-statistics are in absolute-value form.

[d]Continuous variable with range 0 to 1.

offset, however, by the impact of Proposition 2½'s supporters' who oppose redistributive fiscal reform.

Expectations of a tax shift are difficult to isolate from expectations of tax reduction. In both cases, for example, people would expect Proposition 2½ to lead to lower property taxes. If respondents preferred shifting burdens away from property taxes onto state taxes, however, the expectation of higher state taxes would increase the probability of a "yes" vote on Proposition 2½. Thus, the finding reported above that this expectations variable has a negative coefficient suggests that voters are more concerned with tax reduction than with actual tax reform.

In an attempt to incorporate more directly respondents' expectations about tax shifts, the model includes a dummy variable that takes on the value 1 if the voter expected Proposition 2½ to "encourage the state legislature to reform Massachusetts taxes," and 0 otherwise. Expecting tax reform increases the probability of a "yes" vote by 5.7 percentage points compared to not expecting reform. Moreover, because so many respondents expected tax reform, the weighted impact of this variable is relatively large. Unfortunately, however, the possibility that this variable represents expectations of overall tax reduction rather than of a tax shift cannot be ruled out since "tax reform" means different things to different people.

Another approach to the tax shift issue is through respondents' expectations of new state aid. Aside from state takeover of local expenditure responsibilities or legislation enabling local communities to use non-property taxes, a tax shift can only occur if new state aid financed by state taxes replaces lost property tax revenues. This logic justifies interpreting a variable that takes on the value 1 if the respondent expects Proposition 2½ to lead to more state aid and 0 otherwise as an indicator that the respondent expects tax reform. The variable makes a small positive, but statistically insignificant, contribution to the statewide favorable vote on Proposition 2½.

To summarize, attitudes and expectations about tax reform in the sense of tax shift contribute an estimated 5.5 to 10.1 percentage points to the statewide favorable vote on Proposition 2½, depending on how one interprets the variable for expectations of "tax reform." The desire for redistributive tax reform, however, works in the opposite direction; those who desire such reform are more likely to vote against the tax limitation measure.

Relative Fiscal Status

To what extent were voters motivated by the desire to improve or preserve the fiscal position of their households relative to that of other groups? To isolate this motivation, the model includes a set of variables representing respondents' views about their households' fiscal position relative to business firms, poor households, and minority households at the time of the vote, and perceptions of changes in relative status during the previous two years. Each current-status variable takes on the value of 1 if the respondent believes that the other group receives more public services in relation to taxes paid than his or her household, and 0 otherwise. Each change-in-status variable takes on the value of 1 if the respondent believes the fiscal status of the other group has improved relative to that of his or her household over the past two years. The weighted impacts of these six variables, reported in Table VIII, start from a baseline belief that the respondent's household is fiscally as well off as each of the other groups and that the relative positions have not been changing over time.[28]

Of particular interest are the change variables, all of which are statistically significant at the five percent level for all three categories. The belief that business firms have been improving their fiscal status relative to the respondent's household increases the probability of a "yes" vote by 4 percentage points and contributes 1.8 percentage points to the overall favorable vote in Proposition 2½. Thus, while concern about the shift of taxes away from business firms onto individuals motivated some support for the tax limitation measure,

Table VIII

RELATIVE FISCAL STATUS

Estimated Coefficients and Weighted Impacts on Total Vote[a]

Variable	Form	Coefficient (t-statistics)[c]	Weighted Impact on Total Vote For	Against	Net
Perception of fiscal position relative to that of respondent's household					
Business firms are better off					
--today	0-1	-0.030 (1.34)		-0.018[b]	
--compared to 2 2 years ago	0-1	0.041 (1.77)	0.018		
Poor households are better off					
--today	0-1	0.015 (0.56)	0.007[b]		
--compared to 2 years ago	0-1	0.071 (2.18)	0.015		
Minority households are better off					
--today	0-1	0.035 (1.27)	0.018[b]		
--compared to 2 years ago	0-1	-0.055 (1.88)		-0.019	
			0.058	-0.037	0.021

[a]Based on the full model of voting behavior which includes 45 independent variables and was estimated by ordinary least squares. The dependent variable is "1" if the respondent voted "yes" on Proposition 2½ and "0" if he or she voted "no." The weighted impacts are the difference between the actual statewide vote of household heads for Proposition 2½ and the predicted vote had no household head perceived other groups were fiscally better off or had become better off relative to the respondent's household during the past two years.

[b]Based on a coefficient that is not statistically significant at the 5 percent one-tailed level.

[c]t-statistics are in absolute value form.

the overall impact of this attitude on voting behavior appears to be small.

The coefficients for beliefs about the changing relative position of poor families and minorities are intriguing because they differ in sign. The view that poor households have been gaining relative to the respondent's household increases the probability of a "yes" vote on Proposition 2½ by 7.1 percentage points while the comparable view about minorities decreases the probability by 5.5 percentage points. These results suggest that respondents disapprove of perceived fiscal gains among poor households at a time when their own income outlook is uncertain. At the same time, however, gains among minority households are apparently viewed as an appropriate outcome of public sector activity that tax limitation measures should not restrict. Because a smaller proportion of the sample respondents perceive fiscal gains for the poor than perceive gains for minorities, the positive weighted impact on the statewide vote of attitudes toward the poor is somewhat smaller than the negative impact of attitudes towards minorities.

The signs of the variables representing respondents' views of their current relative status complicate the net impact of voter attitudes toward other groups. The belief that poor or minority households are fiscally better off than the respondent's household leads to support for a change and, hence, for tax limitation. Neither coefficient, however, is statistically significant at the five percent level. One possible interpretation of the negative (but insignificant) sign of the variable representing perceptions about the current fiscal position of business is that voters who consider business taxes to be high in relation to services received (a low value of the variable) are more likely than others to support Proposition 2½ and its promise of overall tax reduction. This interpretation is consistent with one of the campaign arguments used by the proposition's advocates. It also conforms to the finding that 74 percent of the total sample (voters and non-voters) agreed with the statement that Proposition 2½ would attract more business and industry to Massachusetts.[29] It should be noted, however, that the variable actually expresses percep-

tions of the fiscal position of Massachusetts firms relative to the respondent's household rather than firms in other states.

Beliefs that business firms and poor households have improved their relative fiscal positions during the previous two years and that poor families and minorities receive greater net benefits from the public sector spending than the respondent's household thus contribute about 5.8 percentage points to the statewide favorable vote on Proposition 2½. On the other hand, the view that firms are relatively well off today and that minority households are better off than two years ago contributed 3.7 percentage points to the overall vote against the proposition.

Public Sector Job Status

As shown in Table IX, the estimated equation implies that employment in the local public sector reduces the probability of a "yes" vote on Proposition 2½ by 12 percentage points, while employment in either state government or local public schools reduces the probability by about 7 percentage points. Since the equation controls for preferred levels of and expectations about public services, taxes, and spending, these effects are relatively large and suggest that concern among local public employees about income reduction or morale loss strongly influenced their votes. The weighted effects on the overall vote are small, however, because only a small proportion of all Massachusetts households have a public sector employee.

III. SUMMARY AND CONCLUSIONS

Table X combines the preceding findings to present a complete picture of the relative importance of the six issues motivating the Proposition 2½ vote, based on the concept of weighted impacts. The first line estimate indicates what the voting outcome would have been had voters neither wanted nor expected changes in the level and distribution of public services and taxes, neither perceived governmental inefficiency nor expected Proposition 2½ to lead to more efficient or

Table IX

PUBLIC SECTOR JOB STATUS

Estimated Coefficients and Weighted Impacts on Total Vote[a]

Variable	Form	Coefficient (t-statistic)[c]	Weighted Impact on Total Vote For	Against	Net
State government employee	0-1	-0.076 (1.30)		-0.003[b]	
Local government employee	0-1	-0.121 (3.06)		-0.010	
Local school employee	0-1	-0.072 (1.69)		-0.005	
				-0.018	-0.018

[a]Based on the full model of voting behavior which includes 45 independent variables and was estimated by ordinary least squares. The dependent variable is "1" if the respondent voted "yes" on Proposition 2½ and "0" if he or she voted "no." The weighted impacts are the difference between the actual statewide vote of household heads for Proposition 2½ and the predicted vote had no household head lived in a household with an employee working in the state or local public sector.

[b]Based on the coefficient that is not statistically significant at the 5 percent one-tailed level.

[c]t-statistics are in absolute-value form.

Table X

SUMMARY OF WEIGHTED IMPACTS ON TOTAL VOTE

A. Assume all voters neither want nor expect any public sector changes and no household member works in the state and local public sector			
Base favorable vote			0.267
B. Issues increasing the favorable vote			
Inefficiency and waste in			
--local government	0.093		
--state government	0.070		
--local schools	0.121		
		0.284	
Lower taxes and spending			
--lower property taxes	0.106		
--other	0.084		
		0.190	
Tax reform (net)		0.078	
Desire for lower public services (not welfare)[a]		0.010	
Lower welfare		0.057	
Relative fiscal status (net)		0.021	
Total additions to favorable vote			0.640
C. Issues decreasing the favorable vote			
Fear of service loss[b]			
--education	-0.075		
--other[c]	-0.132		
		-0.207	
Fear of lower school funding		-0.040	
Fear of higher taxes			
--state taxes	-0.060		
--taxes paid by household	-0.007		
		-0.067	
Fear of loss of job security among public sector employees		-0.018	
Total subtractions from favorable vote			-0.332
Overall total			0.575

[a] This nets out the anomalous, but statistically insignificant, 0.002 negative impact on the favorable vote contributed by those who want to decrease human services.

[b] Net of the small effects of expected service increases.

[c] This nets out the anomalous, but statistically insignificant, 0.017 impact on the favorable vote contributed by those who want to increase human services.

responsible government, and had no direct stake in the state-local public sector through a household member's employment in that sector. Under these assumptions, only about one quarter (26.7 percent) of Massachusetts household heads would have supported the tax limitation measure. In other words, most people would not have voted for change simply for the sake of change.

Among the factors leading to increases in the favorable vote, views toward inefficiency and waste in government are the most important. Included in these views are the effects not only of perceptions of existing inefficiency but also of expectations that Proposition 2½ would improve the situation, with the latter playing the larger role. The 28.4 percentage point contribution of these views alone is large enough to turn the estimated 26.7 percent base favorable vote into majority support for Proposition 2½. The proposition's orientation toward local, rather than state, government is reflected in the distribution of these effects by level of government; despite the finding that voters believe state government is less efficient than local government, views about inefficiency in state government contribute less to the favorable vote than do similar views about the operation of local government and public schools.

Preferences for and expectations of lower taxes and spending contribute another 19.0 percentage points to the favorable vote. Since more than half of this contribution reflects the expectation of lower property taxes, this might be interpreted as a tax reform effect. Tax reform in the sense of tax shift rather than reduction, however, adds another estimated 7.8 percentage points to the favorable vote. Overall, the model implies that concerns about the level and composition of taxes increase the "yes" vote on Proposition 2½ by 26.8 percentage points.

In contrast to these large effects related to inefficiency and tax issues, the preference for lower levels of all services except welfare contributes only 1.0 percentage point to the favorable vote. This result clearly does not support the view that the success of Proposition 2½ represents a general demand for fewer public services.

Preferences for and expectations of lower welfare services, however, are estimated to increase the favorable vote by 5.7 percentage points. Finally, the desire to improve one's fiscal status relative to that of other groups also contributes 2.1 percentage points. Combining all of these factors leading to a favorable vote with the predicted base favorable vote of 26.7 percent yields a 90.7 percent statewide vote for Proposition 2½.

Other preferences and expectations, however, motivated voters to oppose the tax limitation measure. As Table X indicates, fear of service loss is the most important cause of a "no" vote. Of this 20.9 percentage point impact, 7.5 points represent concern about reductions in education (and recreation) services. Combining this with evidence of concern about reduced education funding, fear of Proposition 2½'s adverse impact on local public schools reduces the favorable vote by 11.5 percentage points. The belief that Proposition 2½ would lead to higher state taxes or higher taxes for the respondent's household contributes another 6.1 percentage points to the negative vote, while concern about the impact on public sector jobs adds 1.8 percentage points. Subtracting the sum of these negative effects from the predicted 90.7 favorable vote yields the sample of 57.5 percent in favor of Proposition 2½.

Thus, the survey results clearly indicate that the vote for Proposition 2½ was much more an attempt to obtain lower taxes and more efficient government than to reduce the level of public services. This conclusion is remarkably consistent with those from other states. From a survey-based analysis of the vote on Michigan's successful 1978 Headlee Amendment limiting state taxes, for example, Courant, Gramlich and Rubinfeld conclude that:

> . . . 3 out of 4 voters responsible for the plurality of the Headlee Amendment were motivated by a desire for either efficiency gains or a free lunch. Only one out of 4 appears to favor a smaller-sized public sector where both spending and taxes are reduced.[30]

Using survey data gathered just before the 1976 vote on California's property tax limitation measure, Proposition 13, Jack Citrin also draws qualitatively similar conclusions; like voters in Massachusetts and Michigan, a majority of California residents were apparently satisfied with the existing levels of most public services at the time of the tax limitation vote. Moreover,

> fully 38 percent of the California electorate believed that state and local governments could provide the same level of services as previously with a 40 percent reduction in their budget.[31]

The similarity of findings from Massachusetts, Michigan and California is striking in light of the different forms of their tax limitation measures and their differing fiscal and economic situations. These findings need not imply that state and local governments were in fact any more inefficient in the late 1970's than in other periods. They do suggest, however, that, for whatever reason -- high and rising property taxes, changing economic conditions or a shift in political ideology -- voters in some states were particularly sensitive to issues of inefficiency and waste during this period.

FOOTNOTES

[1]In 1979, property tax burdens in Massachusetts were the highest of any state in the continental United States, expressed both per capita and per $1000 of personal income. The 1979 per capita burden of $545 was almost double the United States average of $280.

[2]Because of an interviewing error, only 25 of the 55 interviews for the city of Salem were conducted. Hence, throughout the analysis, each Salem respondent is given a weight of two.

[3]A preliminary analysis and description of the survey results can be found in Ladd and Wilson, "Proposition 2½: Explaining the Vote." Appendices A, B and C of that report describe the sampling plan, the questionnaire and interviewing procedure and present a demographic profile of the sample.

[4]The Massachusetts Teachers' Association proposal was defeated by a 36 to 64 percent vote.

[5]See Courant, Gramlich, and Rubinfeld (1980 and 1981) for an analysis of the Michigan vote and the comments by Oakland in Ladd and Tideman (1981), p. 76.

[6]To check whether people would have voted differently had Proposition 2½ been a constitutional amendment, respondents were asked whether or not they thought Proposition 2½ was an amendment to the constitution. Those respondents who answered correctly were then asked how they would have voted had it been a constitutional amendment. A comparison of these responses with their reported votes shows a small net shift of 40 votes against the proposition (out of our total voter sample of 1,253 respondents) had it been a constitutional amendment.

[7]In Massachusetts' relatively simple government structure, the 351 cities and towns of the Commonwealth levy all the property taxes. Both the county governments, which have few responsibilities, and the limited number of special districts finance themselves by assessing the cities and towns.

[8]The property tax is the only broad-based tax available to cities and towns. Aside from small amounts of revenue from the motor vehicle excise tax (about 6.5 percent of local tax revenues before Proposition 2½), charges, fees, and intergovernmental aid provide municipalities' only other revenue.

[9]Most school district boundaries are coterminous with those of cities and towns. Before Proposition 2½, school committees enjoyed fiscal autonomy in the sense that each city or town body was required to accept the proposed school budget and to raise the necessary property taxes as part of the municipal tax levy.

[10]If voters were perfectly rational, it would be desirable to interact each preference variable with an expectations variable. This would allow fiscal changes that are simultaneously preferred and expected to exert a larger impact on the probability of a "yes" vote on Proposition 2½ than those that are either preferred but not expected or expected but not preferred. In addition to being unmanageable, a complete interactive specification would require many arbitrary assumptions. Hence, the basic model reported here eschews interactions in favor of a more inclusive range of possible fiscal motivations. But see footnotes 20 and 23 below.

[11]Of the (weighted) total of 1586 respondents, 1253 said they voted on Proposition 2½. Of these, 139 were eliminated because of incomplete information.

[12]Throughout this paper we refer to the impact of a variable on the probability of a "yes" vote or on the statewide favorable vote for Proposition 2½. These statements should be interpreted to refer to the population of Massachusetts household heads, rather than to the entire population of voters.

[13]This simplicity comes, however, from the imposition of a functional form that is theoretically inferior to the logit form. As noted in the appendix, the two forms have similar implications for the relative importance of the various motivating factors.

[14]The sample probability of a "yes" vote is .58 and of a "no" vote .42. Hence the percent that would be correctly predicted by chance using these aggregate probabilities is $(.58)^2 + (.42)^2 = .51$.

[15]For the simple case of a 0-1 variable, the weighted impact is calculated by multiplying the estimated coefficient by the proportion of the sample having the specified characteristic. See footnote 22 below.

[16]See Ladd and Wilson, "Proposition 2½: Explaining the Vote"; Citrin "Do People Want Something for Nothing: Public Opinion Polls on Taxes and Government Spending"; and Courant, Gramlich and Rubinfeld, "Why Voters Support Tax Limitation Amendments: The Michigan Case."

[17]A combination of factor analysis and judgment were used to define the five service clusters. The responses to questions about preferred service levels for each of the 15 separate services included in the survey were first factor analyzed using a principal axis approach with quartimax rotation. Based on the factor loadings, the 15 services were initially grouped into six factors as follows (with factor loadings in parentheses):

1. Public elementary and high school education (0.51), after school programs (0.77), adult education (0.56), local parks and recreation (0.51) and state colleges and universities (0.74).

2. Police (0.78) and fire (0.80) services.

3. Garbage pick-up (0.73) and street and sidewalk repairs (0.68).

4. Special education (0.64), mental health programs (0.78) and services for the elderly (0.69).

5. Welfare and other public assistance (0.70), and support for local public transit (0.65).

6. Courts and judges (0.86).

Three services were then excluded: Courts and judges were eliminated to reduce the number of clusters; support for local public transit, because of the low correlation between voters' expectations about Proposition 2½'s impact on public transit and on welfare; and state and community colleges, because they are financed differently than the other services in the education and recreation cluster.

[18]The welfare cluster consists of a single item.

[19]Responses were averaged across those items in the cluster for which responses were given. This procedure makes it possible to keep in the sample those observations missing individual parts of the question, provided a response was given for at least one item in the cluster.

[20]The model was also estimated with preferences and expectations interacted by service category. Because dummy variables were used to construct the interaction variables (e.g., prefer but do not expect a reduction in public safety), this alternative specification has the advantage of not requiring any arbitrary assumptions about the intervals between response categories. Because response categories had to be collapsed to keep the total number of variables to a manageable number, however, the interactive model is also somewhat arbitrary. See footnote 23 below.

[21]This conclusion is confirmed by the interactive version of the model. Among voters who said they did not want welfare cuts, those who expected large cuts were more likely to support Proposition 2½ than those who expected no cuts and were almost as likely to support it as those who both wanted and expected reduced welfare services.

[22]For variables taking on n discrete values, the expression for the weighted impact (M) for the ith variable takes the form:

$$M_i = \sum_{i=1}^{n} f_{ik} \hat{B}_i (V_{ik} - V_{io}) \quad .$$

where f_{ik} is the proportion of the sample in the k^{th} value category of variable i, $\hat{B}_i$ is the estimated effect of the i^{th} variable in the voting model, V_{ik} is the k^{th} value of the i^{th} variable and V_{io} is the value of the value of the i^{th} variable for the case of no change. (V_{io} equals 3 on a 5-point linear scale and ln3 on a 5-point logarithmic scale). For multi-valued variables (e.g., variables that represent clusters of responses), M_i is approximated by letting k refer to intervals (each of length one standard deviation) and V_{ik} to the mean value in the k^{th} interval. For most of the calculations, six intervals were used, three on either side of V_{io}.

[23]The comparable weighted impact from the interactive specification is 18.2 percentage points. The implications of the reported specifications are thus virtually identical to those of the richer interactive specification.

[24]Ladd and Wilson, pp. 30-33.

[25]Earlier versions of the model included two dummy variables for each spending category to represent perceptions of some inefficiency (5 to less than 15 percent possible spending reduction) and much inefficiency (greater than 15 percent possible spending reduction). The similarity between the coefficients in each pair justifies the single set of dummy variables reported in the final equation.

[26]In the logit model, the variable representing perceptions of inefficiency in state government is also statistically significant at the five percent level.

[27]The school spending coefficient is not statistically significant in the logit model.

[28]These data are from responses to two questions: "Sometimes it seems that certain groups of people pay a lot in taxes but don't get very many services while others don't pay much in taxes but get a lot of services. Using the phrases in list one, please tell me whether _____ get a lot less than they pay for, a little less, the same amount as they pay for, a little more, or a lot more than they pay for"; and "Now we'd like you to think about two years ago. Taking into account services they get for the taxes they pay, are _____ better off, worse off, or about the same now as they were two years ago?" In the case of the first question, the responses were scored on a five-point scale, ranging from a lot less (1) to a lot more (5). In the case of the second question, the responses were scored on a three-point scale, ranging from better off (1) to worse off (3).

The variables used in the regression model were computed by subtracting respondents' scores for their households from their scores for other groups. The value 1 was given to those respondents who thought a specific group paid less for services or was better off now than the respondent's household.

[29]Ladd and Wilson, p. 19.

[30]Courant, Gramlich and Rubinfeld, "Why Voters Support Tax Limitations: The Michigan Case," (1980 and 1981), p. 18.

[31]Citrin, p. 115.

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APPENDIX A

WEIGHTED IMPACTS BY MODEL TYPE

The logit model is conceptually superior to the linear model but is more difficult to interpret. This appendix illustrates that the results from the linear model are similar to those from the logit model.

The weighted impacts from the logit model have been calculated from two starting points: the 9.6 percent favorable vote predicted to occur if voters had neither wanted nor expected any public sector changes and the favorable vote of 58.5 percent predicted to occur if everyone were characterized by mean values for all the variables included in the model. Thus, the logit entries in the following tables represent upper and lower bound estimates of the impact of the specified beliefs on the statewide vote of household heads for Proposition 2½.

Table A-1

PREFERRED AND EXPECTED CHANGES IN SERVICE LEVELS

IMPACTS ON STATEWIDE VOTE FOR PROPOSITION 2½

By Model Type

Variable	Logit Model		Linear Model
	Base = 0.096[a] ($\hat{P}$ - 0.096)	Base = 0.585[b] (0.585 - $\hat{P}$)	Base = 0.0260[c] ($\hat{P}$ - 0.260)
Education and Recreation			
Preferences	-0.006	-0.017	-0.007
Expectations	-0.035	-0.111	-0.060
Combined	-0.039	-0.126	-0.067
Public Safety			
Preferences	-0.005	-0.014	-0.006
Expectations	-0.023	-0.069	-0.028
Combined	-0.027	-0.082	-0.034
Sanitation and Street Repair			
Preferences	-0.001[d]	-0.002[d]	0.000
Expectations	-0.013[d]	-0.037[d]	-0.011
Combined	-0.014	-0.039	-0.011
Human Services			
Preferences	0.012[d]	0.034[d]	0.015
Expectations	-0.022	-0.065	-0.032
Combined	-0.003	-0.034	-0.017
Welfare			
Preferences	0.013	0.032	0.016
Expectations	0.034	0.080	0.035
Combined	0.050	0.109	0.051
Total Community Services			
Expectations	-0.040	-0.092	-0.054
Services Used by Household	-0.007[d]	-0.021[d]	-0.008

[a]The entries in this column show the impacts on the predicted statewide vote for Proposition 2½ of the actual distributions of preferences and expectations separately by service category compared to the base case which assumes that voters neither want nor expect any public sector changes. For example, the first entry says that the actual distribution of preferences for education and recreational services lowered the vote by 0.6 percentage points compared to the 9.6 percent favorable vote predicted to occur if no one had wanted nor expected changes of any type including changes in the level of educational and recreational services. Note that the combined effect of preferences and expectations for each service category is not merely the sum of the two separate impacts because of the nonlinearity of the model.

TABLE A-1 (continued)

[b] The entries in this column show the predicted impacts on the statewide vote for Proposition 2½ of the assumption that no one prefers (for the preference variables) or expects (for the expectations variables) a change in the particular service compared to the 58.5 percent favorable vote predicted to occur if everyone is characterized by mean values for all variables included in the model. To make the signs consistent with those in the other columns, the impact is defined as the predicted value for the base case (0.585) minus the predicted value for the specific simulation under consideration. Thus, the first entry shows that the favorable vote would have been 1.7 percentage points higher than the 0.585 vote predicted for mean values had no voter wanted changes in educational and recreational services.

[c] The entries in this column show the weighted impacts of each variable on the statewide favorable vote for Proposition 2½ derived from the linear model. See Table III.

[d] Based on a coefficient that is statistically insignificant at the five percent one-tailed level.

Table A-2

INEFFICIENCY AND WASTE

IMPACTS ON STATEWIDE VOTE FOR PROPOSITION 2½

By Model Type

Variable	Logit Model		Linear Model
	Base = 0.096[a] ($\hat{P}$ - 0.096)	Base = 0.585[b] (0.585 - $\hat{P}$)	Base = 0.0260[c] ($\hat{P}$ - 0.267)
Perceptions of Inefficiency in:			
local government	-0.004[d]	-0.012[d]	-0.002[d]
state government	0.065	0.147	0.034[d]
local schools	0.026	0.068	0.031
welfare spending	0.019[d]	0.051[d]	0.015[d]
Attitude			
Local government employees are overpad and do not work hard..	0.009	0.026	0.011
Expectations			
More efficiency in local government	0.057	0.133	0.084
More efficient, responsible, or less corrupt government	0.016	0.043	0.021
More local control over school spending	0.083	0.178	0.090
Combined	0.480	0.486	0.280

[a]The entries in this column show the predicted impacts on the statewide vote for Proposition 2½ of the actual distribution of the indicated variable compared to the base case which assumes that voters neither want nor expect any public sector changes.

[b]The entries in this column show the predicted impacts on the statewide vote for Proposition 2½ of the assumption that no one expects a change or perceives a need for a change compared to the 58.7 percent favorable vote predicted to occur if everyone is characterized by mean values for all variables included in the model. To make the signs consistent with those in other columns, the impact is defined as the predicted value for the base case (0.585) minus the predicted value for the simulation under consideration.

[c]The entries in this column show the weighted impacts of each variable on the statewide favorable vote for Proposition 2½ derived from the linear model. See Table V.

[d]Based on a coefficient that is statistically insignificant at the five percent one-tailed level.

Table A-3

SPENDING AND TAXES

IMPACTS ON STATEWIDE VOTE FOR PROPOSITION 2½

By Model Type

Variable	Logit Model		Linear Model
	Base = 0.096 ($\hat{P}$ - 0.096)	Base = 0.585 (0.585 - $\hat{P}$)	Base = 0.0260[c] ($\hat{P}$ - 0.267)
Want lower spending and taxes			
-- state government	0.015[d]	0.039[d]	0.018[d]
-- local government	0.009[d]	0.026[d]	0.012[d]
-- local schools	0.010[d]	0.027[d]	0.023
Expect decrease in school funds	-0.024	0.073	-0.041
Expect lower property taxes	0.117	0.229	0.106
Expect higher state taxes	-0.026	-0.143	-0.063
Expect lower household taxes	0.021	0.055	0.024

[a] The entries in this column show the predicted impacts on the statewide vote for Proposition 2½ of the actual distribution of the indicated variable compared to the base case which assumes that voters neither want nor expect any public sector changes.

[b] The entries in this column show the predicted impacts on the statewide vote for Proposition 2½ of the assumption that no one wants a change or expects a change compared to the 58.7 percent favorable vote predicted to occur if everyone is characterized by mean values for all variables included in the model. To make the signs consistent with those in other columns, the impact is defined as the predicted value for the base case (0.585) minus the predicted value for the simulation under consideration.

[c] The entries in this column show the weighted impacts of each variable on the statewide favorable vote for Proposition 2½ derived from the linear model. See Table VI.

[d] Based on a coefficient that is statistically insignificant at the five percent one-tailed level.

Table A-4

TAX REFORM

IMPACTS ON STATEWIDE VOTE FOR PROPOSITION 2½

By Model Type

Variable	Logit Model		Linear Model
	Base = 0.096[a] ($\hat{P}$ - 0.096)	Base = 0.585[b] (0.585 - $\hat{P}$)	Base = 0.0260[c] ($\hat{P}$ - 0.260)
Desired Shifts			
SHIFT1: Shift of education to state taxes	0.018	0.047	0.016
SHIFT2: Shift of special education to state taxes	0.000[d]	0.001[d]	0.005[d]
SHIFT3: Shift of other local services to state taxes	-0.004[d]	-0.012[d]	-0.004[d]
SHIFT4: Shift of certain services to user charges	0.012[d]	0.033[d]	0.015[d]
Attitudes			
State government should give more aid to reduce property taxes	-0.007[d]	-0.019[d]	-0.010[d]
Support for redistributive taxes and aid[e]	-0.001	-0.003	-0.000
Expectations			
Tax reform	0.039	0.096	0.046
More state aid	0.011[d]	0.030[d]	0.010[d]

[a]The entries in this column show the predicted impacts on the statewide vote for Proposition 2½ of the actual distribution of the indicated variable compared to the base case which assumes that voters neither want nor expect any public sector changes.

[b]The entries in this column show the predicted impacts on the statewide vote for Proposition 2½ of the assumption that no one wants a change or expects a change compared to the 58.7 percent favorable vote predicted to occur if everyone is characterized by mean values for all variables included in the model. To make the signs consistent with those in other columns, the impact is defined as the predicted value for the base case (0.585) minus the predicted value for the simulation under consideration.

[c]The entries in this column show the weighted impacts of each variable on the statewide favorable vote for Proposition 2½ derived from the linear model. See Table VII.

Table A-4 (continued)

[d]Based on a coefficient that is statistically insignificant at the five percent one-tailed level.

[e]Net effect of those who want and those who do not want a more redistributive fiscal structure.

Table A-5

RELATIVE FISCAL STATUS

IMPACTS ON STATEWIDE VOTE FOR PROPOSITION 2½

By Model Type

Variable	Logit Model		Linear Model
	Base = 0.096[a] ($\hat{P}$ - 0.096)	Base = 0.585[b] (0.585 - $\hat{P}$)	Based = 0.0260[c] ($\hat{P}$ - 0.260)
Perception of fiscal position relative to that of respondent's household			
Business firms are better off--			
Today	-0.012[d]	-0.036	-0.018
Compared to 2 years ago	0.009[d]	0.026[d]	0.018
Poor households are better off--			
Today	0.011[d]	0.029[d]	0.007[d]
Compared to 2 years ago	0.018	0.049	0.015
Minority households are better off--			
Today	0.009	0.026	0.018
Compared to 2 years ago	-0.019	-0.055	-0.019

[a] The entries in this column show the predicted impacts on the statewide vote for Proposition 2½ of the actual distribution of the indicated variable compared to the base case which assumes that voters neither want nor expect any public sector changes.

[b] The entries in this column show the predicted impacts on the statewide vote for Proposition 2½ of the assumption that no one wants a change or expects a change compared to the 58.7 percent favorable vote predicted to occur if everyone is characterized by mean values for all variables included in the model. To make the signs consistent with those in other columns, the impact is defined as the predicted value for the base case (0.585) minus the predicted value for the simulation under consideration.

[c] The entries in this column show the weighted impacts of each variable on the statewide favorable vote for Proposition 2½ derived from the linear model. See Table VIII.

[d] Based on a coefficient that is statistically insignificant at the five percent one-tailed level.

Table A-6

PUBLIC SECTOR JOB STATUS

IMPACTS ON STATEWIDE VOTE FOR PROPOSITION 2½

By Model Type

Variable	Logit Model		Linear Model
	Base = 0.096[a] ($\hat{P}$ - 0.096)	Base = 0.585[b] (0.585 - $\hat{P}$)	Base = 0.0260[c] ($\hat{P}$ - 0.260)
State government employee	-0.002[d]	-0.004[d]	-0.003[d]
Local government employee	-0.009	-0.025	-0.010
Local school employee	-0.004[d]	-0.010[d]	-0.005
Combined	-0.014	-0.040	-0.018

[a]The entries in this column show the predicted impacts on the statewide vote for Proposition 2½ of the actual distribution of the indicated variable compared to the base case which assumes that voters neither want nor expect any public sector changes.

[b]The entries in this column show the predicted impacts on the statewide vote for Proposition 2½ of the assumption that no one wants a change or perceives expects a change compared to the 58.7 percent favorable vote predicted to occur if everyone is characterized by mean values for all variables included in the model. To make the signs consistent with those in other columns, the impact is defined as the predicted value for the base case (0.585) minus the predicted value for the simulation under consideration.

[c]The entries in this column show the weighted impacts of each variable on the statewide favorable vote for Proposition 2½ derived from the linear model. See Table IX.

[d]Based on a coefficient that is statistically insignificant at the five percent one-tailed level.